Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A projection optical system which projects an image of a first surface onto a second surface, and which has a lens component formed of fluorite and a lens component formed of silica, comprising:

a first lens group including at least one lens component formed of fluorite and having a positive refractive power;

a second lens group which is arranged in an optical path between the first lens group and the second surface and which has a negative refractive power; and

a third lens group which is arranged in an optical path between the second lens group and the second surface and having a positive refractive power;

wherein the projection optical system has no reflective surfaces in the optical path between the first surface and the second surface; and

wherein when the number of the lens components formed of silica is Snum, the number of the lens components formed of fluorite is Cnum, and a numerical aperture of the second surface side of the projection optical system is NA, the following conditions are satisfied:

$$Snum>Cnum$$

$$NA>0.75.$$

2. (Original) The projection optical system as set forth in claim 1, wherein at least one lens component among the lens components formed of fluorite in the first lens group has a positive refractive power.

3. (Original) The projection optical system as set forth in claim 2, wherein the third lens group has at least one lens component formed of fluorite.

4. (Original) The projection optical system as set forth in claim 3, wherein when the distance between the first surface and the second surface is L, the distance between the first surface and the lens surface of the first lens group closest to the second surface side is L1, and the focal length of the second lens group is f2, the following conditions are satisfied:

$$0.2 < L1 / L < 0.5$$

$$0.03 < -f2 / L < 0.10.$$

5. (Original) The projection optical system as set forth in claim 4, wherein the first lens group has at least one aspherical lens surface.

6. (Original) The projection optical system as set forth in claim 5, wherein the lens groups which form the projection optical system are the first, second and third lens groups only.

7. (Original) The projection optical system as set forth in claim 6, wherein the projection optical system is optimized with respect to light having a center wavelength of 200 nm or less.

8. (Original) The projection optical system as set forth in claim 2, wherein when the distance between the first surface and the second surface is L, the distance between the first surface and the lens surface of the first lens group closest to the second surface side is L1, and the focal length of the second lens group is f2, the following conditions are satisfied:

$$0.2 < L1 / L < 0.5$$

$$0.03 < -f2 / L < 0.10.$$

9. (Original) The projection optical system as set forth in claim 2, wherein the first lens group has at least one aspherical lens surface.

10. (Original) The projection optical system as set forth in claim 2, wherein the lens groups which form the projection optical system are the first, second, and third lens groups only.

11. (Original) The projection optical system as set forth in claim 2, wherein the projection optical system is optimized with respect to light having a center wavelength of 200 nm or less.

12. (Original) The projection optical system as set forth in claim 1, wherein the third lens group has at least one lens component formed of fluorite.

13. (Original) The projection optical system as set forth in claim 1, wherein when the distance between the first surface and the second surface is L, the distance between the first surface and the lens surface of the first lens group closest to the second surface side is L1, and the focal length of the second lens group is f2, the following conditions are satisfied:

$$0.2 < L1 / L < 0.5$$

$$0.03 < -f2 / L < 0.10.$$

14. (Original) The projection optical system as set forth in claim 1, wherein the first lens group has at least one aspherical lens surface.

15. (Original) The projection optical system as set forth in claim 1, wherein the lens groups which form the projection optical system are the first, second, and third lens groups only.

16. (Original) The projection optical system as set forth in claim 1, wherein the projection optical system is optimized with respect to light having a center wavelength of 200 nm or less.

17. (Previously Presented) A projection exposure apparatus which projects and exposes a reduced image of a pattern arranged in a mask onto a workpiece, comprising:

a light source having a center wavelength of 200 nm or less;

an illumination optical system which guides exposure light from the light source to the pattern on the mask; and

the projection optical system as set forth in claim 1;

wherein the mask can be arranged at the first surface, and the workpiece can be arranged at the second surface.

18. (Previously Presented) A projection exposure apparatus which projects and exposes a reduced image of a pattern arranged in a mask onto a workpiece, comprising:

a light source having a center wavelength of 200 nm or less;

an illumination optical system which guides exposure light from the light source to the pattern on the mask; and

the projection optical system as set forth in claim 2;

wherein the mask can be arranged at the first surface, and the workpiece can be arranged at the second surface.

19. (Previously Presented) A projection exposure method which projects and exposes a reduced image of a pattern arranged in a mask onto a workpiece, comprising the steps of:

supplying exposure light having a center wavelength of 200 nm or less;

guiding the exposure light to the pattern on the mask; and

projecting an image of the pattern on the mask arranged at the first surface onto the workpiece arranged at the second surface by using the projection optical system as set forth in claim 1.

20. (Previously Presented) A projection exposure method which projects and exposes a reduced image of a pattern arranged in a mask onto a workpiece, comprising the steps of:

supplying exposure light having a center wavelength of 200 nm or less;

guiding the exposure light to the pattern on the mask; and

projecting an image of the pattern on the mask arranged at the first surface onto the workpiece arranged at the second surface by using the projection optical system as set forth in claim 2.

21. (New) A projection optical system which projects an image of a first surface onto a second surface, and which has a lens component formed of fluorite and a lens component formed of silica, comprising:

a first lens group including at least one lens component formed of fluorite and having a positive refractive power;

a second lens group which is arranged in an optical path between the first lens group and the second surface and which has a negative refractive power; and

a third lens group which is arranged in an optical path between the second lens group and the second surface and having a positive refractive power;

wherein when the number of the lens components formed of silica is Snum, the number of the lens components formed of fluorite is Cnum, a numerical aperture of the second surface side of the projection optical system is NA, the distance between the first surface and the second surface is L, the distance between the first surface and the lens surface of the first lens group closest to the second surface side is L1, and the focal length of the second lens group is f2, the following conditions are satisfied:

$Snum > Cnum$

$NA > 0.75$.

$0.2 < L1 / L < 0.5$

$0.03 < -f2 / L < 0.10$.